

I claim:

1. A method for determining the activity of an enzyme that uses  $\text{PGH}_2$  but does not produce malondialdehyde, comprising:
  - 5           (a) contacting a sample with a reducing agent under conditions suitable to substantially convert  $\text{PGH}_2$  into malondialdehyde and thereby obtain a reacted sample;
  - (b) contacting the reacted sample with a malondialdehyde detection reagent under conditions suitable to substantially convert the malondialdehyde into a  
10           detectable compound; and
  - (c) determining the amount of the detectable compound, wherein the activity of the enzyme in the sample is inversely proportional to the amount of the detectable compound.
- 15   2. The method of claim 1, wherein the enzyme is selected from the group consisting of prostaglandin synthases and prostacyclin synthases.
3. The method of claim 2, wherein the enzyme is a prostaglandin synthase.
4. The method of claim 3, wherein the enzyme is prostaglandin E synthase (PGES).
5. The method of claim 1, wherein the reducing agent is ferrous chloride.
- 20   6. The method of claim 1, wherein the detection reagent is 2-thiobarbituric acid (TBA).
7. The method of claim 1, wherein the detection reagent is a 2-thiobarbituric acid derivative.
8. The method of claim 1, wherein the detectable compound is a fluorescent compound.

9. A method for determining the activity of an enzyme that produces  $\text{PGH}_2$  but does not produce malondialdehyde comprising:

- 5 (a) contacting a sample with a reducing agent under conditions suitable to substantially convert  $\text{PGH}_2$  into malondialdehyde and thereby obtain a reacted sample;
- (b) contacting the reacted sample with a malondialdehyde detection reagent under conditions suitable to substantially convert the malondialdehyde into a detectable compound; and
- 10 (c) determining the amount of the detectable compound, wherein the activity of the enzyme in the sample is proportional to the amount of the detectable compound.

10. The method of claim 9, wherein said enzyme is a  $\text{PGH}_2$  synthase.

11. The method of claim 9, wherein the reducing agent is ferrous chloride.

12. The method of claim 9, wherein the detection reagent is 2-thiobarbituric acid (TBA).  
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13. The method of claim 9, wherein the detection reagent is a 2-thiobarbituric acid derivative.

14. The method of claim 9, wherein the detectable compound is a fluorescent compound.

20 15. A method of identifying a modulator of an enzyme that uses or produces  $\text{PGH}_2$  but does not produce malondialdehyde comprising:

- (a) contacting a sample containing an enzyme with a test compound;
- (b) contacting the sample with a reducing agent under conditions appropriate to convert  $\text{PGH}_2$  into malondialdehyde and thereby obtain a reacted sample;

(c) contacting the reacted sample with a malondialdehyde detection reagent under conditions appropriate to convert the malondialdehyde into a detectable compound; and

5 (d) determining the amount of the detectable compound, wherein the amount of detectable compound is used to determine whether or not the test compound modulates the activity of the enzyme.

16. The method of claim 15, wherein said enzyme is isolated or purified.

17. The method of claim 15, wherein said enzyme is partially purified.

18. The method of claim 15, wherein said test compound is a small molecule.

10 19. The method of claim 15, wherein the amount of detectable compound is determined in a sample at multiple time points, and wherein a change in the amount of detectable compound over time indicates that the test compound modulates the activity of the enzyme.

15 20. The method of claim 15, wherein the amount of detectable compound is determined in the sample contacted with a test compound, and compared to the amount of detectable compound determined in a control sample containing the enzyme wherein the enzyme has not been contacted with the test compound.

20 21. A kit for determining the activity of an enzyme that uses or produces PGH2 but does not produce malondialdehyde as a product comprising a reducing agent and a malondialdehyde detection reagent.

22. The kit of claim 21, further comprising instructions.